PATENT COOPERATION TREATY

To: YOU ME PATENT AND LAW FIRM Seolim Bldg., 649-10, Yoksam-dong, Kangnam-ku, Seoul 135-080 Republic of Korea	# PCT **WRITTEN OPINION OF THE** **INTERNATIONAL SEARCHING AUTHORITY** (PCT Rule 43bis.1)

Date of mailing *(day/month/year)*	3 November 2005 (03.11.2005)

Applicant's or agent's file reference OPP040032KR	FOR FURTHER ACTION See paragraph 2 below

International application No. PCT/KR 2004/002731	International filing date *(day/month/year)* 27 October 2004 (27.10.2004)	Priority Date *(day/month/year)* 29 October 2003 (29.10.2003)

International Patent Classification (IPC) or both national classification and IPC
H04Q 7/30, H04B 7/26, 7/208, H04L 12/28

Applicant	ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE

1. This opinion contains indications relating to the following items:

   ☒ Cont. No. I   Basis of the opinion

   ☐ Cont. No. II   Priority

   ☐ Cont. No. III   Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

   ☐ Cont. No. IV   Lack of unity of invention

   ☒ Cont. No. V   Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   ☐ Cont. No. VI   Certain documents cited

   ☐ Cont. No. VII   Certain defects in the international application

   ☐ Cont. No. VIII   Certain observations on the international application

2. **FURTHER ACTION**

   If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

   If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

   For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ AT **Austrian Patent Office** Dresdner Straße 87, A-1200 Vienna Facsimile No. +43 / 1 / 534 24 / 535	Authorized officer ENGLISCH M. Telephone No. +43 / 1 / 534 24 / 565

Form PCT/ISA/237 (cover sheet) (January 2004)

Continuation No. I

Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed.

Continuation No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims ----	YES
	Claims 1-12	NO
Inventive step (IS)	Claims ----	YES
	Claims 1-12	NO
Industrial applicability (IA)	Claims 1-12	YES
	Claims ----	NO

2. Citations and explanations:

The following documents have been cited in the Search Report:

D1: Eklund et al., IEEE standard 802.16: "A technical overview of the WirelessMAN™ air interface for broadband wireless access." In: IEEE Communications Magazine, Volume 40, Issue 6, June 2002.
Pages 98-107, XP011092870
D2: US2003/0198179A1

D1 gives an overview about the technical medium access control and physical layer features of the WirelessMAN ™ air interface according to the IEEE standard 802.16. The use of the ranging requests and responses are described in detail. During initial access, the subscriber station (SS) performs initial power leveling and ranging using ranging request (RNG-REQ) messages transmitted in initial maintenance windows. The adjustments to the SS's transmit time advance, as well as power adjustments, are returned to the SS in ranging response (RNG-RSP) messages. For ongoing ranging and power adjustments, the base station (BS) may transmit unsolicited RNG-RSP messages commanding the SS to adjust its power or timing. Because the BS is in control and directly monitors the uplink signal quality, the protocol for changing the uplink burst profile for an SS is simple: the BS merely specifies the profile's associated UIUC whenever granting the SS bandwidth in a frame. So transmission specific settings are adapted according to the changing channel conditions in connection with a bandwidth request.

Furthermore, it is explicitly mentioned that extensive bandwidth allocation and QoS mechanisms are provided, the details of scheduling and reservation management are left unstandardized and provide an important mechanism for vendors to differentiate their equipment.

The present application features a preamble-based bandwidth request method for a wireless portable Internet system, comprising the steps of receiving a bandwidth request code from a subscriber station, transmitting state control information (RNG-RSP) based on a channel state to the subscriber station and allocating an uplink resource for transmission of a bandwidth request message to the subscriber station.

Accordingly, all features of claims 1 to 12 of the present application can be found in D1 and therefore said claims are not new and do not involve an inventive step.

D2 relates to a ranging method for a BWA (Broadband Wireless Access) system, and more particularly to a ranging method for a mobile communication system using an OFDMA (Orthogonal Frequency Division Multiple Access) scheme. According to D2 the ranging procedure is classified into three categories, namely an initial ranging process, a bandwidth request ranging process and a maintenance ranging process (a periodic ranging process), according to the objectives. Especially the second category, the bandwidth request ranging process seems to be a ranging process in close relation to an ordinary bandwidth request.

However, D2 does not describe in detail the features of the bandwidth request ranging process and therefore merely defines a wider state of the art.

Industrial applicability is given.